PRIMARY CARE CASE STUDY 0900

Training Family Physicians in Kyrgyzstan

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Table of Contents

TRAINING FAMILY PHYSICIANS IN KYRGYZSTAN

[EDITOR'S NOTE: As reported previously in the Issyk-kul case-study by Hauslohner and Millslagle, also in this primary health care case study series, the health care system in Issuk-kul Oblast, Kyrgyzstan, is undergoing considerable restructuring and reform. At the center of these reforms is the Family Group Practice, or FGP. FGPs will provide most of the primary care services required by local residents, which will permit the polyclinics and hospitals to concentrate on more specialized care. FGPs can be successful, however, only if the primary care physicians who work in these new organizations possess the skills, experience, and attitudes necessary in order for them to treat a broad range of common health conditions and to care for patients of all ages and both genders. Physicians who are to work in the FGPs must receive additional training that will enable them to function as "general" and/or "family" physicians.

In order to satisfy this need for additional training, a special training program has been established at a large city polyclinic in Karakol, the center of Issuk-kul Oblast. This program, presented by the Karakol *Center for Excellence*, provides training in general and family medical practice for primary health care physicians in the oblast. The course lasts approximately one year; the curriculum was developed during 1996-97 with technical assistance from two experienced family physicians from the United States. Financial assistance was provided by the U.S. Agency for International Development under the Zdrav*Reform* Program. During its first year of operation, the Center trained "physician-trainers" who are to direct the Center's training program in the future.

One of the two American physicians who helped to establish the Center, Dr. Idar Rommen from Seattle, Washington, has written a lengthy memoir of his experiences in Issuk-kul Oblast. Following are excerpts from this memoir, which include numerous interesting observations and conclusions concerning both the training of family physicians and the problems encountered in the effort to strengthen the role of primary health care in Kyrgyzstan.]

In May 1996, I took a one-year leave of absence from my family group practice in Seattle, Washington. I came to Kyrgyzstan in order to work with a small, non-governmental organization, the Scientific Technology and Language Institute (STLI) which planned to organize a family practice training program in Bishkek, the capital of Kyrgyzstan. When the start of the training program in Bishkek was delayed, I was given the opportunity to spend nearly a full year, working in Karakol where, with support from the U.S. Agency for International Development, it was decided to establish a family medicine training program for physicians from Issuk-kul Oblast.

1.0 How the Karakol *Center for Excellence* was Established

Our first problem was to find the right location. Initially, we looked for a site outside of a regular polyclinic, because we wished to emphasize the fact that we were preparing physicians for a fundamentally new system of community-based primary care. However, we could not find a suitable alternative, and so, in the end, our training program was established at a large polyclinic in Karakol.

But we were fortunate to have ended up in this location. The polyclinic housed two family group practices (FGP), which comprised a total of seven physicians, and which were responsible for the care of 9,000 patients. We decided to transform these family

practices into a training center. In this way, all the work required to set up a functioning clinic with a loyal patient population had already been done for us, and we were able to avoid long delays associated with remodeling. We could get started immediately. Also, the costs of our training program were substantially lower than we first anticipated. It was necessary to change offices and reorganize the delivery of care in the FGPs, but the changes were instituted with surprisingly little difficulty, perhaps because we already had established good relationships with the FGP physicians and had earned their trust.

The *minimum* number of physicians we felt we needed to train was six—two from each of the three FGP specialties (internist, pediatrician, and obstetrician-gynecologist)—so that if one of the physician-trainers left before completing the program (for whatever reason), we would have at least one other of similar qualifications to depend on. On the other hand, six or seven also was the *maximum* number of physicians we felt we could train, on account of severe space limitations within the polyclinic. Physicians were selected for training, on the condition that they agreed to serve as trainers for at least 1-2 years following their completion of the program. Thus, we had to train not only good family physicians, but good family physician *trainers* as well.

We obtained permission from the chief physician of the polyclinic to build a barrier across a hallway in the polyclinic, in order to create a pleasant, well-lit waiting room where we set up chairs and tried to imitate the typical American family medicine office waiting room. We hoped to increase the privacy of patients, by reducing their tendency to congregate outside of the physicians' examination room and periodically to open the door to see if it was their turn to be seen. Unfortunately, we spent a lot of energy trying to persuade patients to remain in the waiting area until they were called, but we achieved only limited success.

From the beginning, we concentrated on educating our patients regarding the purposes of the training center, so that they would understand what we were trying to do, and so that they would help us by coming to us with their common problems in the fields of orthopedics, skin surgery, otolaryngology, ophthalmology, dermatology, neurology, and psychiatry, instead of by-passing us and seeking care directly from specialists at the polyclinic. We delivered by hand to the home of each of our patients a brochure explaining what family medicine was and what we were trying to do at the *Center for Excellence*. This "public education" had a limited amount of success, but we understood that more than a single brochure is required in order to change behavior that has been learned over many decades.

We encouraged our patients to choose a single physician who would then provide care for the whole family. We quickly discovered, however, that although the gynecologists were our busiest specialists—each seeing up to 35 patients per half day—few people preferred a gynecologist to serve as their family physician. In practice, most of our patients continued to follow the same patterns of self-referral as in the past.

Our shortage of space was made worse by regulations of the public health authorities—the Sanitary Epidemiological Station, or SES. SES rules require that a separate room be dedicated to immunizations, and they forbid intramuscular injections to be given in a regular examination room or in the immunization room. SES rules require that ill patients cannot be seen in the same room as well patients, and that sick children cannot be seen in the same room as pregnant women, even if they are not seen simultaneously. A separate room is required for sterile procedures; and sick children are not allowed in the waiting room. The SES also interrupted our program from time to time, by ordering two-week immunization campaigns which took 2-3 physicians out of the clinic in order to immunize patients in schools and homes scattered widely over the city.

2.0 Family Physicians in the United States

In order to understand and appreciate my observations on the efforts to strengthen primary care and to train family physicians in Kyrgyzstan, the reader may find it helpful to know more about the changing role of family medicine in the United States.

Approximately 20 years ago, the health care system in the United States faced a situation that was similar in certain key respects to that which exists today in Kyrgyzstan and in the other NIS. Primary health care services were very weak, while most medical care was provided by specialists. As the cost of medical care increased rapidly, Americans were compelled to consider the relative *economic* effectiveness of the different treatment methods that were used. Previously, the economic cost of health care had not been of great concern. Diagnostic tests were ordered without much regard for their cost, and hospital stays were much longer than they are currently.

As concern with the cost of health care increased, physicians began to order tests more selectively and to search for ways to reduce major costs such as hospital care. More importantly, a growing number of specialists realized that strong primary health care services offered a means of providing high quality medical care at lower cost. A patient with abdominal pain, a skin problem, or depression could receive care for all of these problems from a *single* family physician, instead of having to see three different physicians at three times the cost. Meanwhile, other "referral" specialists (e.g. urologists, endocrinologists, dermatologists) could focus their attention and energy on patients with relatively complex and uncommon problems.

In 1976, the first family medicine training programs were established; these require three years of additional, broad training following the completion of medical school. Training in family medicine is of a similar depth and duration as that given to other specialists and is much more extensive than the one year previously required of the "general practitioner." In the United States, all physicians receive very broad medical training during their four years of medical school and generally do not focus on a specialty until they begin post-graduate training. The first year of a family medicine training program usually is focused mainly on hospital-based inpatient care, although two afternoons each week may be reserved for work in a model family medicine outpatient clinic. The second

and third years of the program become progressively more focused on outpatient care in the model clinic, where each physician-in-training is assigned his or her own panel of patients.

During their three years of training, family physicians-in-training have an opportunity to treat a wide variety of outpatient and inpatient conditions and problems. Very often, the physicians have questions concerning the diagnosis or optimal treatment of a particular problem, and in the model family medicine clinic there is always a faculty member available with whom the physician-in-training can consult. After completing the three-year training period, family physicians either open their own business or, more commonly, join an established group practice of family physicians.

Family physicians in the United States care for a wide variety of medical problems—the average U.S. family physician is able to care for at least 85 percent of the medical problems of his or her patient population—and the quality of their services are just as high as those provided by the other specialties. Family physicians are able to care for common cases of hypertension with skill equal to that of a cardiologist. They care for vaginitis and family planning needs with skill equal to that of a gynecologist. They care for common skin lacerations with the skill of a surgeon and can cast a common ankle fracture with the skill of an orthopedist. They perform flexible sigmoidoscopy as well as the gastrointestinal specialist; and they treat common children's problems as well as a pediatrician.

They treat upper respiratory infection, including otitis media and sinusitis, acute bronchitis, hypertension, diabetes, asthma, allergies, vaginitis, and urinary tract infections. They perform a variety of procedures in their offices: EKG interpretation, chest and long bone x-ray interpretation, pulmonary function testing, oximetry, tympanometry, indirect and direct laryngoscopy, allergy skin testing, the casting and splinting of common fractures, treatment of abrasions of the cornea, pap smears, pelvic exams, endometrial biopsies, and examinations required for drivers' licenses and for entry to schools and universities. Most family physicians perform minor surgeries in their offices and assist with major surgeries in the hospital. Most care for their own patients in the hospital, e.g. in case of pneumonias, pyelonephritis, congestive heart failure and dehydration, and chest pain possibly indicative of myocardial infarction. Many perform exercise electrocardiography and vasectomy and evaluate vaginal and cervical lesions with culposcopy. A significant number provide complete obstetric care of low risk pregnancy, including spontaneous vaginal delivery and forceps and vacuum vaginal delivery in the hospital.

In addition, U.S. family physicians provide preventive medical care, as well as prenatal and well-child care.

How can one physician do all of these things so well? The key word is "common." ***The family physician is a specialist in problems that are common.*** If there were no family physicians, the gynecologists would tire of all the common cases of vaginitis they would

have to see; the surgeons would tire of all the common skin lacerations they would have to suture; and the cardiologists would throw up their hands in frustration at all the cases of common high blood pressure. Family physicians do not grow bored with all of the common problems they see, because they treat common problems *across all specialties*. And because they see such problems often, family physicians become expert at caring for them. A good balance between family physicians and referral specialists allows the talents of all physicians to be used with maximum effectiveness.

3.0 Comparison Between Family Physicians and FGPs

Although the group practice reforms now being implemented in Kyrgyzstan will strengthen considerably the range and quality of primary health care services, there are, nevertheless, a number of reasons why a system based on well-trained family physicians probably would be more effective, both clinically and economically, than a system based on FGPs.

1. The coordination and continuity of medical care would be improved. Three physicians rarely function so well as a team that they are able to coordinate a patient's medical care as well as one physician can alone. A physician who knows the patient's entire medical history well, and who knows the family and social situation of the patient, can make the best decisions in arranging for specialist consultations and diagnostic testing, and for ensuring there are no conflicts among the medications that different specialists may prescribe.

2. The personal relationship between physician and patient would be improved. A single physician who cares for the entire family can build relationships with the family as a whole and with each family member individually. The family physician sees the family three times as often as the individual FGP physician and has a better chance to build patient trust and confidence. A family physician providing care to one family member can inquire about other members and thereby gain a fuller picture of the course of a prolonged illness and its true impact on the patient. The family physician's ability to evaluate psychological and emotional problems is superior to that of the FGP doctor. With the family's trust and respect, the family physician specialist is better able to elicit help from other family members in treating a difficult patient or an elderly senile patient.

3. Gynecologists may abandon the FGPs, as they grow tired of so narrow a specialty. The field of obstetrics and gynecology is rich in its variety of experiences, but much of this variety is associated with hospital care, in particular, the opportunity to perform surgical procedures and to interact with other specialists. Gynecologists who are limited to outpatient practice soon find their work quite repetitive, with few challenges, and their intellectual talents largely wasted. On the other hand, if outpatient gynecologists are given the opportunity to learn and to practice the full spectrum of family medicine, they will be used much more effectively, and their

particular skill and experience in gynecology will make them especially valuable members of a group of family physician specialists.

4. An FGP physician will not see a family as often as a family physician and will thus have fewer chances to practice preventive medicine: e.g. periodic health exams, immunizations, and health education.

5. The family physician specialist will be able to practice medicine with greater economic effectiveness. Family physicians know their patients better and are more familiar with their patients' care, because they coordinate every aspect of that care. Because they alone are responsible for their patients' medical records, those records are generally more complete and accurate than in cases when responsibility is spread among multiple physicians. Better knowledge and a more accurate patient record are likely to permit family physicians to provide better care in a shorter amount of time, compared to FGP physicians. Also, because family physicians are likely to understand their patients' financial situation, they can order tests and medications with a better idea of whether the patient can afford them.

6. Patients will not have to spend as much time and money visiting different physicians because they have one physician who is able to care for the large majority of their medical problems.

These statements do not lessen the importance of FGPs as means by which the current medical system, which is oriented mainly toward specialist care, is transformed into a system based on strong primary care model. Without the FGPs, there would be little effective movement towards primary care; FGPs have created momentum that is now moving Kyrgyzstan in the direction of genuine health care reform.

4.0 Requirements for Training FGP Physicians in Issuk-kul Oblast

Although practitioners of the three specialties within the FGP—gynecology, pediatrics and internal medicine—receive some re-training, they remain specialists and together comprise a field of knowledge that is narrower than the scope of family medicine. Beyond the current range of these three specialties, family medicine includes common problems in orthopedics, minor surgery, dermatology, venereology, psychiatry, otolaryngology, ophthalmology, neurology, the treatment of common problems with tuberculosis and HIV infection, and often the treatment of drug and alcohol abuse. Currently, most patients in Kyrgyzstan with these problems either bypass the FGP or are referred to specialists by FGP physicians. All are areas in which training is needed.

More specifically, the gynecologists seem well grounded in anatomy and reproductive physiology, but they do not know how to perform an adequate PAP smear. They do not know the pros and cons of postmenopausal estrogen replacement therapy and how to prescribe estrogen replacement therapy. They do not have access to microscopes, in order to do vaginal wet mounts, so they can treat vaginitis only empirically. They use the

correct anti-infective agents for vaginitis but do not seem to know what organisms they are targeting with the medicines. They have adequate experience with IUDs but do not have enough experience in dealing with problems encountered in the management of Depoprovera contraception. They refer these problems to the gynecologist-specialists at the Woman's Consultation Center. They have very limited knowledge of oral contraceptives, but this may not be of urgency since patients seem to prefer IUDs and Depoprovera.

The gynecologists do not seem to provide any significant care and advice to patients who wish to become pregnant. They cannot check blood tests for rubella or immunize their patients against rubella, so they are not able to prevent congenital rubella syndrome. Without Rh immune globulin, they can do little to protect the children of Rh negative women. Prevention of Hepatitis B transmission from mother to fetus is hampered by the lack of appropriate immunizations. Postdates pregnancies are treated with excessive periods of hospitalization, but not overly aggressive attempts to promote delivery. Vaginal cultures apparently are being taken as a part of routine prenatal care, but the bacteriology labs are not reporting *any* cultures that are positive for group B streptococcus, which is the leading cause of neonatal sepsis in the United States (where such cultures are positive for between 5-40 percent of pregnant women, depending on the study). It is unlikely that this bacterium is absent in Kyrgyzstan.

Pediatricians see most of their sick patients during home visits, usually without having an otoscope to evaluate for otitis media. Indeed, most FGP physicians have very little experience, using either the otoscope or the ophthalmoscope. They do not check red reflexes during well-child examinations, leaving eye evaluation entirely to the ophthalmologists. In their offices, pediatricians primarily provide child care; yet, in the case of as many as 90 percent of patient visits, they are required to make some kind of specialist referral. Pediatricians—indeed, all the FGP doctors—must be trained to evaluate their patients for common eye, ear, neurologic and surgical problems. This would make much better use of their intellectual talents, and free the ophthalmologists, otolaryngologists, surgeons and neurologists from work that does not utilize their specialist talents. Examinations for entry to schools and universities, as well as driving license exams, constitute a terrible waste of the specialist's time and should be the responsibility of family physicians.

FGP internists appear to be treating high blood pressure much more often than they would if their patients were taking their anti-hypertensive medications appropriately. All FGP physicians need to be taught to work more closely with their hypertensive patients to keep blood pressures stable. Episodic or irregular treatment of chronic hypertension is more dangerous to the patient than no treatment at all. Physicians also seem uncomfortable in instructing their asthma and bronchospastic emphysema patients in the proper use of metered dose inhalers. They tend to rely on medications with significantly greater side effects and lesser efficiency: oral theophylline and oral beta agonists.

An usually frequent problem presenting to FGP physicians is right upper quadrant abdominal pain. These patients often are given the diagnosis of chronic cholecystitis on the basis of history alone. Often they are sent for abdominal ultrasound, which may or may not confirm the diagnosis, although I would not be fully confident of the results of the small, old-style ultrasound machines that are used today in Karakol. Because of a mistaken notion that a normal ultrasound means an absence of liver pathology, a set of liver enzyme is seldom ordered, while alkaline phosphates are not available in Karakol. The only hepatitis marker available locally is a Hepatitis B surface antigen. With such limited diagnostics available, physicians cannot accurately evaluate what is really going on with the right upper quadrant pain. Unproven bile analysis diagnostics and "biliary lavage" therapeutic maneuvers are performed with some apparent success in reducing the abdominal discomfort. It would be interesting to organize a diagnostic study of right upper quadrant pain in Karakol in order to better understand why this complaint occurs so frequently.

Internists seldom use antacids and H2 blockers for empiric treatment of dyspepsia, because they have been told that dyspepsia usually is associated with a low acidity state rather than a high acidity state. There is a possibility that genetic differences could make Central Asia gastric physiology different from other races, but I am inclined to doubt this. This area, too, would constitute a good subject for scientific study and probably would not require an especially complicated research design.

Physicians in Issuk-kul Oblast generally are not familiar with the generic names of most medications and, as a result, sometimes give their patients twice the therapeutic dose of a medicine, not knowing that two medicines with different names are actually the same drug. They may also give two medications from the same pharmaceutical class, thus raising the risk of side effects. It is common for patients to receive three medications for a given medical problem, when one or two medications would have sufficed. Patients have come to expect this and may not feel they have received proper care *unless* they have been prescribed several medications.

Patients have also come to associate intramuscular injections with the highest quality treatment. An instance when this mode of treatment is most dangerous is when gentamycin is used to treat outpatient infections. Gentamycin is usually most appropriate for infections treated in the hospital. In Issyk-kul, gentamycin is used to treat outpatient infections, often to eliminate a staphylococcus infection. In fact, gentamycin is only effective as an adjunctive antibiotic to more powerful antistaphylococcal drugs, and should *not* be used alone for staphylococcal infections. Oxacillin is available in Karakol as an oral and parenteral medication, and would be much more effective and much less dangerous than gentamycin. Issyk-kul physicians have no blood tests available in order to monitor gentamycin levels; as a result, they could be causing their patients, especially the elderly, permanent sensorineural hearing loss and chronic kidney insufficiency.

FGP physicians need training in what bacteria are most likely to be responsible for a given infection, so that they can make wise empiric antibiotic choices while waiting for

results of cultures. This is especially important, inasmuch as results frequently are not returned for as long as 10 days after the culture is sent to the lab. FGP physicians often use two antibiotics, when one would be enough, thus increasing the likelihood of drug interactions and of side effects such as pseudomembranous colitis.

As is true elsewhere in the NIS, unproven therapies are common in Karakol. Most of these therapies are not harmful, but they exact a financial cost and divert extremely scarce resources away from other, *proven* therapies. For example, ultraviolet light treatment seems to be used to treat almost anything. I once had to explain to one of Karakol's best physicians that even if ultraviolet light were an effective way of treating sinusitis, there is no good way actually to deliver the ultraviolet light past the skin and bone of the face to the depth of the sinuses.

The dermatology textbook used most often by the local dermatologists describes the treatment of common skin problems with methods that are both expensive and potentially dangerous. For example, so-called "auto-infusion" therapy—where blood is removed from the arm and then re-injected into the same patient's buttock—has the potential of causing a crippling deep buttock infection. Another potentially dangerous situation arises from the tendency to use heparin ointment for deep venous thrombosis. Since this mode of treatment will not effectively treat deep venous thrombosis, its use may inadvertently heighten significantly the risk of pulmonary embolism and death. Kyrgyzstan cannot afford to pay for these kinds of treatment, neither financially nor clinically.

Training in critical scientific thinking would be helpful. An analysis of the statistical validity of published articles in medical journals would encourage FGP physicians to exercise their own judgment and to view more skeptically unproven pronouncements by official medical "authorities." An opportunity to perform their own, small scale medical research projects could be extremely valuable experience for these physicians.

Finally, a family medicine training program should include instruction in the "art" of medicine. Family physicians should be skilled in "customer service" and the analysis of patients' "hidden agendas." They should know how to cope with an angry or otherwise difficult patient, and how to make the patient a member of the "team" providing his or her own medical treatment.

5.0 Training Methods

The foundation of the training program at the *Center for Excellence* is the model clinic. Each day, we begin with a one-hour lecture (from 8:30 to 9:30 AM). Then, we examine patients for three hours, followed by a one-hour lunch break, after which we examine patients for another hour (from 1:30 to 2:30 PM). We end the day with a 90-minute combined lecture-and-discussion of one or more specific cases. The afternoon didactic session is intended to be a relaxed, informal discussion, during which physicians are able to ask any questions they want, whatever they may be.

5.1 Curriculum

We lecture first about high frequency medical problems as well as primary care topics that are outside the combined scope of the three specialties represented in the FGPs. We start by spending two weeks on prenatal care, followed by a week on well-child and newborn care, including a trip to the newborn nursery at the Maternity Hospital. We then spend two and one-half weeks on dermatology; three weeks on gynecology; two weeks on cardiology, including two days of lectures and a day and a half electrocardiography workshop by a visiting cardiologist from Bishkek. We spend a week on pediatric infections, a week on ophthalmology and otolaryngology, and two and one-half weeks on orthopedics. (A more detailed version of the lecture curriculum is presented in the Annex.) Once a week, we evaluate three different EKGs as a group.

Because local physicians are being trained to serve as *trainers* of family medical specialists, they are given increasingly frequent opportunities to present their own lectures. Shortly before I left Karakol, we invited one physician from each of the 81 FGPs in the oblast to participate in a three-day family medicine conference; in all, 60 physicians were able to attend. Each of the Center's physicians-in-training were given an opportunity to present a lecture. Some of the physicians were more relaxed and more coherent in their presentations than others. Some even made their first stabs at imitating my style, by posing frequent questions designed to keep the audience thinking and to assess how much the audience understood. Others were unable to shed the more typical lecture style of reading rapidly from notes and avoiding eye contact with the audience. A videotape of the conference now is being circulated among Issyk-kul FGPs.

When I left Karakol, physicians at the Center had begun making brief, 10-minute presentations three times per week at administrative meetings, and were leading a weekly 90-minute teaching session for Karakol physicians each Wednesday afternoon. We devoted a certain amount of our own teaching time to helping these future trainers to practice their lecturing style and to formulate good questions. In order to encourage other FGP physicians to attend these lectures and to listen attentively, we designed tests that the FGP physicians must complete during one-to-four-week time periods, which is how long it takes us to cover the material being tested during our Wednesday lecture sessions. In the future, the lecture curriculum may be expanded to include monthly "mini-conferences" at more distant sites around Lake Issyk-kul; and once each quarter, one physician from each FGP may be invited to attend a larger conference in Karakol.

5.2 The "Learning-By-Doing" and "Precepting" Methods

General and family medicine normally are taught most effectively in a clinical setting, in which future specialists are able to treat real illnesses and provide care to real patients, under the supervision of an experienced instructor. Unfortunately, it has been more difficult to organize good clinical training than to present lectures, mainly because we have not yet established a full "fund-holding" financing system—which would create strong incentives for FGP physicians *not* to refer their patients to specialists—and

because many patients with the most interesting medical problems continue to bypass us and to seek care from specialists directly.

During a typical week, I was asked to "precept," that is, to accompany the attending physician, on visits to 3-4 patients. Occasionally, I did unsolicited precepting, by visiting the physicians' examination rooms during patient care hours. Because patients generally still prefer to take their gynecology problems to gynecologists, their pediatric problems to pediatricians, and their internal medicine problems to internists, each doctor tends to see mainly medical problems that she or he already is quite familiar with and, as a result, often does not see any need for precepting.

We began to see some families who understand the meaning of family medicine and who bring their entire family to see a single physician. But this phenomenon still is uncommon. We also experienced success in broadening patients' exposure to general medicine, by establishing a rotation system in which a pediatrician is allowed to work in the place of a gynecologist, who works in the place of an internal medicine doctor, who then works in the place of the pediatrician. Gynecologists can thus act as preceptors for physicians in the other two specialties; and the other two specialties likewise can precept in their own fields. This is one of the great advantages of a training program that trains physicians who already have at least 10 years of experience in their particular fields. I do not know precisely how much of this "cross-precepting" is taking place, but often I was told what one physician had advised another, and sometimes I was asked for my opinion when there were disagreements.

I emphasized to physicians at the *Center for Excellence* that they should do all they can, in order to gain exposure to new medical problems they have not treated previously. I asked them to do as thorough a job as possible in examining patients with unfamiliar problems and to develop as much as possible their diagnosis and plan for treatment, before coming to me for help. Our first group of family medicine trainers may need more than a year, to gain the breadth of experience required to become true family physicians, but they will clear the way for those who follow.

There is one additional method that we have used as a means of encouraging physicians to learn by practical, clinical experience. We developed a list of medical procedures that lie outside each physician's narrow specialty, which *all* physicians, regardless of specialty, must demonstrate they can perform competently. For example, internists and pediatricians must document that they have inserted three IUDs under the direction of a gynecologist, who must sign a statement of confirmation. We also developed a list of medical problems that *all* physicians, regardless of specialty, must be able to report real experience in helping to manage. For example, pediatricians, internists, and gynecologists all must document that they instructed three patients successfully in the use of a metered dose inhaler. We hope that, by setting these goals, we will encourage physicians to take an active, independent role in their own training.

6.0 The Provision of Care in Patients' Homes

While examining statistical data during the summer of 1996, we discovered that visits to patients' homes comprise one half of each physician's work time and one third of his or her patient visits, which is a substantial percentage of physician resources. Our curiosity piqued, we accompanied several physicians during home visits, some of which seemed to us to serve more of a social than a clinical purpose. The physician who visited the home usually took only a stethoscope and no other diagnostic equipment. Every one of the patients we saw easily could have walked to the polyclinic. We saw no significantly ill or crippled patients; indeed, all had minor illnesses. After the *Center for Excellence* was established, we paid close attention to the number of requests by patients for home visits. We found that the number of these requests generally was than a fourth of the number of home visits actually made by the FGP physicians.

So, why are physicians visiting patients' homes three times as often as they are requested to do so? We were never able to develop a fully satisfactory explanation. But it is clear that if physicians' salaries are increased significantly, e.g. following introduction of an adequately-financed fund-holding system, physicians will need to use their time as efficiently as possible; thus, means must be found to reduce the number of unnecessary home visits. Slowly, the public's expectations need to be changed so that home visits are made only to those patients who truly need the visits, and not for the purpose of treating minor illnesses in otherwise healthy patients.

When the *Center for Excellence* opened, we advertised for a feldsher who might be able to help the Center's physicians reduce the amount of time they devoted to home visits, by substituting for the physicians in certain cases. We also thought it would be interesting to examine how physicians and feldshers can work together caring for the same population. To our surprise, no feldshers answered our newspaper advertisement. Instead, a resuscitation specialist answered the advertisement; and she has since performed almost all of the home visits to the Center's patients. She works three hours per day outside of the polyclinic. Some days, she may make only three visits; other days, she may have 15 home visits to make and may work five hours or more. We tried to identify those patients who truly need a home visit, although many patients who do not meet our criteria continue to demand a home visit. Mothers with sick children are especially reluctant to take them out into the cold in order to visit the physician's office. On the other hand, some patients with minor problems have responded well to advice given over the telephone.

Our home visit specialist has taught the Center's receptionists to screen telephone calls for complaints that probably can be handled adequately with instructions provided over the telephone. The receptionists also have been trained to listen for complaints that may require a response by the city's ambulance service. After helping with phone calls in the mornings, the home care specialist performs home visits in the afternoon. She normally takes with her a stethoscope, blood pressure cuff, otoscope, and thermometer, as well as paracetamol and nitroglycerin tablets.

7.0 Monitoring the Availability of Medicines

The pharmaceutical sector in Issuk-kul Oblast has been transformed from a system of state-owned pharmacies to a network composed mainly of small, privately-owned pharmacies, most of which have a very small inventory. There also are still three state-owned pharmacies, including one in the pediatric polyclinic and one in the Oblast Hospital. Very often a patient obtains a prescription from a physician and must visit several different pharmacies in search of the particular medicine, not always successfully.

One of the most common problems I faced in training physicians in Issyk-kul was that often I did not know what medications were available locally; and sometimes even the local physicians did not know or could not remember where a particular medicine might be found. In order to develop systematic information on the availability of medicines, the Zdrav*Reform* Program developed a list of the most essential and least expensive medicines used in primary care. Beginning in December 1996, physicians from the *Center for Excellence* and I used this list to survey the majority of Karakol's pharmacies. The biggest difficulty we encountered was not collecting the information, but, rather, ensuring that the medicines were categorized properly—i.e. listed alphabetically under the proper, internationally-accepted drug classifications—and then confirming which pharmacies had the given medicines in stock, the dosage form of the medicines, and the price. In contrast to most other products offered for sale in Karakol, for which prices generally are similar, prices of medicines differed significantly among the different pharmacies. Fortunately, nearly every drug on the Zdrav*Reform* "Essential Drug List" was available in one or another of the city's pharmacies, although certain eye medications could be obtained only from ophthalmologists and medications for diabetes could be obtained only from endocrinologists.

Our intention is to provide each FGP physician in Karakol with a laminated copy of the drug survey, which will be updated regularly. This should help to improve physicians' decisions about the best course of treatment to follow; and it should help patients to find the best priced drugs in the most conveniently located pharmacy. The result should be improved compliance by patients with their treatment and improved relationships between patients and their physicians.

8.0 The Scope of Family Medicine in Kyrgyzstan

The scope of family medicine in Kyrgyzstan—that is, the range of problems that family physicians should be capable of treating—is only beginning to evolve. This scope will be shaped by economic conditions which, for example, currently make it impossible for most family physicians to have access to EKG machines, x-ray machines, nebulizer equipment, or even rigid sigmoidoscopy. The scope of family medicine also will be affected by political forces within the medical community, including, for example, resistance from some specialists who may not realize the freedom from drudgery that family medicine could bring. The scope of family medicine may be narrowed further by

the lack of assertiveness and critical thinking that were common before independence, and that make it difficult for physicians to break old patterns of subservience to authority.

The scope of family medicine in Kyrgyzstan is likely to be in a state of flux for the next 10-15 years. Thus, it is difficult at this point to recommend a precise curriculum for family medicine training in the Republic. The best course probably is to avoid teaching procedures, as well as the diagnosis and treatment of particular problems, which are unlikely to be needed or encountered in actual practice during the next five years. Later on, as economic and sociopolitical conditions improve, the scope of family medicine will need to be expanded further.

Annex: Lecture Curriculum at the Center for Excellence

I. Prenatal Care

A. Screening for Disease in Pregnancy
   1. Infectious Diseases, including Rubella, Syphilis, Gonorrhea, Hepatitis B, Toxoplasmosis, Herpes Simplex, HIV, Chlamydia, Group B Streptococcus, and UTI
   2. Hemolytic Disease of the Newborn
   3. Anemia
   4. Gestational Diabetes

B. Assessment of Gestational Age and Fetal Growth

C. Discomforts of Normal Pregnancy

   Includes nausea and vomiting, heartburn, constipation, hemorrhoids, swelling and variocosities, leg cramps, fatigue, urinary symptoms, numbness, dizziness, and fainting, shortness of breath, rhinitis, pigmentation, striae gravidarum, bleeding gums, breast changes, headache, and vaginal discharge.

D. Impact of Pregnancy and Childbirth on the Family

E. Patient Education to Improve Safety During Pregnancy
   1. Danger Signs During Pregnancy
   2. Medications and Pregnancy
   3. Physical Activity and Diet
   4. Nicotine and Alcohol Exposure

F. Complications of Pregnancy
   1. Early Pregnancy Bleeding
   2. Late Pregnancy Bleeding
   3. Pregnancy Trophoblastic Disease
   4. Polyhydramnios and Oligohydramnios
   5. Gestational and Overt Diabetes
   6. Hypertensive Disorders of Pregnancy
   7. Preterm Labor
   8. Premature Rupture of Membranes
   9. Twin Pregnancy
   10. Intrauterine Growth Retardation
   11. Postdates Pregnancy
   12. Helping Families Cope with Pregnancy Loss
   13. Rh Isoimmunization
   14. Dermatoses of Pregnancy

II. Newborn Care

A. Physiologic Changes During and After Birth
B. Neonatal Resuscitation
C. Physical Examination of the Newborn
    This includes a trip to newborn nursery at maternity hospital to practice exam skills
D. Neonatal Problems
    This includes hypoglycemia, hyperbilirubinemia, sepsis, seizures, meconium staining and respiratory distress
E. Circumcision
F. Infant Feeding
    l. Weight Gain and Necessary Nutrients
    2. Breast-feeding
    3. Bottle-feeding
    4. Weaning and Introducing Solid Foods
G. Bathing and Cord Care
H. Immunizations
I. Parent Education to Avoid Problems
J. Family Adjustment to the Newborn
K. Crying, Colic, and Diapers
L. Screening Tests for Metabolic Diseases

III. Well-Child Care

A. Growth and Development
    l. Use of Growth Charts and Failure to Thrive
    2. Neurologic Changes During the First Five Years
        a. Changes in Reflexes
        b. Speech and Language Development - Normal and Pathologic
        c. Visual Development and Vision Screening
        d. Balance, Coordination and Fine Motor Skills
        e. Treatment of Developmental Delay
    3. Dental Changes
B. Educating Parents about Child Safety
    l. Drowning, Burns, Falls, and Choking in the Newborn
    2. Dangers of Movement and Climbing - Toddlers
    3. Children and Dogs, Bicycles, Drowning and Lead Poisoning
C. Common Parental Concerns
    This includes constipation, feeding problems, sibling rivalry, and child discipline
D. Immunizations
E. Child Malnutrition and Anemia

IV. Dermatology

A. Basic Skin, Anatomy and Physiology
B. Describing Skin Lesions - Terminology
C. Basics of Dermatologic Therapy
D. Sunburn, Photosensitivity, and Chronic Sun Damage
E. Psoriasis, Pityriasis Rosea, Pityriasis Alba
F. Dermatophytic Infections
G. Exanthems
H. Urticaria
I. Pruritis
J. Pyodermas
K. Benign New Growths
L. Premaliganant and Malignant Growths
M. Hair and Nail Problems

V. Gynecology

A. Gynecologic Anatomy and Examination
B. Gynecologic Endocrinology
C. Amenorrhea
D. Abnormal Vaginal Bleeding
E. Menopause
F. Contraception
G. Infertility
H. Dysmenorrhea, The Premenstrual Syndrome, and Ovarian Cysts
I. Endometriosis, Adenomyosis, and Leiomyomas
J. Pelvic Inflammatory Disease
K. Vaginitis, Vulvitis, and Endometritis
L. Sexually Transmitted Diseases
M. Ectopic Pregnancy
N. The Breast
O. The Pap Smear and Cervical Cancer
P. Endrometrial, Ovarian, and Vaginal Cancer
Q. Acute and Chronic Pelvic Pain

VI. Cardiology

A. Hypertension
    1. Definitions
    2. Diagnosis
    3. Lifestyle Modifications
    4. Medications and Patient Compliance
    5. Special Situations
    6. Hypertensive Emergencies

B. Coronary Artery Disease
    1. Coronary Artery Anatomy and Physiology
    2. Risk Factors
    3. Problems in the Diagnosis of Chest Pain
    4. Diagnostic Tests
    5. Prevention and Prophylaxis
    6. Medical Management
    7. Surgical Management
C. Myocardial Infarction
D. Congestive Heart Failure
E. EKG Interpretation and Arrhythmia
F. Valvular Heart Disease, Congenital Heart Disease, Rheumatic Fever, and Endocarditis
G. Peripheral Vascular Disease
H. Thrombophlebitis and Pulmonary Embolus
I. Basic Cardiac Resuscitation

VI. Pediatric Infections

A. Viral Nasopharyngitis
B. Otitis Media and External
C. Croup, Bronchitis, and Brochiolitis
D. Tonsillopharyngitis and Epiglottitis
E. Periorbital and Orbital Cellulitis
F. Gastroenteritis
G. Urinary Tract Infections
H. Meningitis and Encephalitis
I. Neonatal Sepsis and the Febrile Infant

VII. Rheumatology

A. History and Physical Exam
B. Laboratory Evaluation
C. Rheumatoid and Juvenile Rheumatoid Arthritis
D. Systemic Lupus Erythematosis
E. Seronegative Spondyloarthropathies
F. Crystal-Induced Arthritis
G. Osteoarthritis
H. Fibromyalgia

VIII. Ophthalmology

A. Anatomy and Physiology
B. Eye Examination
C. Eye Conditions in Infants and Children

D. Glaucoma
E. Red Eye Conditions
F. Painful Eye Conditions
G. Conditions Causing Visual Disturbance and Loss
H. Eye Emergencies
I. Eye Medications
J. Systemic Medications Affecting the Eyes

IX. Orthopedics

A. Cervical Strain and Disc Disease
B. Thoracic Outlet Syndrome
C. Shoulder Bursitis, Tendonitis, and Acromioclavicullar Injury
D. Epicondylitis, Olecranon Bursitis and Nursemaids' Elbow
E. Wrist and Hand Problems
    1. Carpal Tunnel Syndrome
    2. De Quervain's Tenosynovitis
    3. Scaphoid Fracture and Lunate Dislocation
    4. Distal Forearm Fractures
    5. Hand Infections
    6. Extensor Tendon Injuries
    7. Flexor Tendon Injuries
    8. Trigger Finger
    9. Ganglion Cysts
    10. Dupytren's Contractures
    11. Techniques of Joint Aspiration and Injection, Digital Anesthesia, Splinting and Casting
F. Thoracic and Low Back Pain
    1. Anatomy
    2. Physical Exam
    3. Danger Signs for Referral
    4. Exercise and Back Pain Conservative Therapy
G. Hip Bursitis and Arthritis
H. Knee Injuries
    1. Anatomy
    2. Osgood-Schlatter's Disease
    3. Osteochondritis Dissecans
    4. Knee Bursitis and Basker's Cyst
    5. Patello Femoral Dysfunction
    6. Osteoarthritis
    7. Patellar Dislocation
    8. Collateral and Cruciate Ligament Injuries
    9. Meniscus Injuries

I. Ankle and Foot Problems
    1. Anatomy and Physiology
    2. Ankle Sprains
    3. Toe Fractures
    4. Calluses and Corns
    5. Plantar Warts
    6. Improper Shoes
    7. Metatarsalgia
    8. Heel Pain
    9. Diabetic Feet

X. Otolaryngology

A. Common Ear Problems
    1. Anatomy and Physiology of the Ear
    2. Examination and Testing of the Ear
    3. Causes of Ear Pain
    4. Causes of Plugged Ear
    5. Causes of Otorrhea
    6. Dizziness and Vertigo
    7. Hearing Loss and Tinnitus
B. Bell's Palsy
C. Nasal and Sinus Problems
    1. Anatomy and Examination
    2. Acute and Chronic Rhinitis
    3. Acute and Chronic Sinusitis
    4. Allergic and Vasomotor Rhinitis
    5. Nasal Polyps and Foreign Bodies
    6. Nasal Trauma
    7. Disorders of Smell
    8. Nosebleeds
D. Throat and Pharynx Problems
    1. Causes of Sore Throat
    2. Hoarseness
    3. Salivary Gland Disorders
    4. Neck Masses

XI. Neurology

A. The Neurologic Examination
B. Headache Differential Diagnosis
C. Parkinson's Disease and Movement Disorders
D. Pain, Spasm and Cramps of Muscle
E. Acute Confusional States and Dementia
F. Disorders of Sleep

G. Numbness, Tingling, and Sensory Loss
H. Seizure Disorders
I. Strokes
J. Demyelinating Diseases
K. Nutritional Metabolic Diseases of the Nervous System
L. Alzheimer's Disease

XII. Behavioral Medicine

A. The Psychiatric Examination
B. Common Behavioral Problems of Children
C. Marriage, Mid-life Crisis, and Menopause
D. Major Depressive Illness and Suicide
E. Anxiety Disorders
F. Personality Disorders
G. Schizophrenia and Thought Disorders
H. Drug and Alcohol Abuse
I. Smoking Cessation
J. Eating Disorders
K. Dealing with Chronic Illness and Disability

XIII. Gastrointestinal System

A. Esophageal Problems
B. Peptic Ulcer and Gastritis
C. Cancers of the Esophagus and Stomach
D. Disorders of Absorption
E. Inflammatory Bowel Disease
F. Acute Intestinal Obstruction
G. Acute Appendicitis
H. Hepatitis
I. Diagnostic Tests in Liver Disease
J. Liver Cancer
K. Disorders of the Gallbladder and Bile Ducts

XIV. Respiratory Problems

A. History, Exam and Diagnostic Procedures
B. Asthma
C. Pneumonia
D. Chronic Bronchitis and Emphysema
E. Lung Cancer

XV. Surgery

A. Wound Care and Suturing
B. Burns
C. Acute Abdominal Pain
D. Local and Digital Anesthesia
E. Thrombosed Hemorrhoids
F. Incision and Drainage of Abscesses

XVI. Pharmacology and Drug Therapy

A. Pharmacokinetics
B. Adverse Drug Reactions
C. Drug Interactions
D. Drug Use in Children, Pregnancy, and in the Elderly
E. Compliance by Patients
F. Generic Substitution
G. Antibiotics

XVII. Infectious Diseases

A. Sexually Transmitted Diseases
B. Urinary Tract Infections
C. Gram Positive Infections
D. Gram Negative Infections
E. Tuberculosis
F. Viral Diseases
G. Fungal Infections
H. Protozoal and Heminthic Infections

XVIII. Kidney and Urinary Tract

A. Acute and Chronic Renal Failure
B. Glomerulonephritis
C. Tubulointersitial Diseases
D. Vascular Injury to the Kidney
E. Nephrolithiasis
F. Tumors of the Urinary Tract
G. Prostate Problems

XIX. Immune System

A. AIDS
B. Disorders of Immune Mediated Injury

XX. Hematology

A. Clotting Disorders
B. Anemias

XXI. Cancer

A. Cancer Principles
B. Chemotherapy
C. Lymphomas
D. Breast Cancer and Ovarian Cancer
E. Testicular Cancer and Prostate Cancer

PRIMARY HEALTH CARE CASE STUDY SERIES
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Primary Health Care in the NIS:

An Overview and Five Case Studies

PRIMARY CARE CASE STUDY 0900

Training Family Physicians in Kyrgyzstan

by Idar Rommen, M.D.

Submitted by the Zdrav*Reform* Program to:
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Table of Contents

TRAINING FAMILY PHYSICIANS IN KYRGYZSTAN

[EDITOR'S NOTE: As reported previously in the Issyk-kul case-study by Hauslohner and Millslagle, also in this primary health care case study series, the health care system in Issuk-kul Oblast, Kyrgyzstan, is undergoing considerable restructuring and reform. At the center of these reforms is the Family Group Practice, or FGP. FGPs will provide most of the primary care services required by local residents, which will permit the polyclinics and hospitals to concentrate on more specialized care. FGPs can be successful, however, only if the primary care physicians who work in these new organizations possess the skills, experience, and attitudes necessary in order for them to treat a broad range of common health conditions and to care for patients of all ages and both genders. Physicians who are to work in the FGPs must receive additional training that will enable them to function as "general" and/or "family" physicians.

In order to satisfy this need for additional training, a special training program has been established at a large city polyclinic in Karakol, the center of Issuk-kul Oblast. This program, presented by the Karakol *Center for Excellence*, provides training in general and family medical practice for primary health care physicians in the oblast. The course lasts approximately one year; the curriculum was developed during 1996-97 with technical assistance from two experienced family physicians from the United States. Financial assistance was provided by the U.S. Agency for International Development under the Zdrav*Reform* Program. During its first year of operation, the Center trained "physician-trainers" who are to direct the Center's training program in the future.

One of the two American physicians who helped to establish the Center, Dr. Idar Rommen from Seattle, Washington, has written a lengthy memoir of his experiences in Issuk-kul Oblast. Following are excerpts from this memoir, which include numerous interesting observations and conclusions concerning both the training of family physicians and the problems encountered in the effort to strengthen the role of primary health care in Kyrgyzstan.]

In May 1996, I took a one-year leave of absence from my family group practice in Seattle, Washington. I came to Kyrgyzstan in order to work with a small, non-governmental organization, the Scientific Technology and Language Institute (STLI) which planned to organize a family practice training program in Bishkek, the capital of Kyrgyzstan. When the start of the training program in Bishkek was delayed, I was given the opportunity to spend nearly a full year, working in Karakol where, with support from the U.S. Agency for International Development, it was decided to establish a family medicine training program for physicians from Issuk-kul Oblast.

1.0 How the Karakol *Center for Excellence* was Established

Our first problem was to find the right location. Initially, we looked for a site outside of a regular polyclinic, because we wished to emphasize the fact that we were preparing physicians for a fundamentally new system of community-based primary care. However, we could not find a suitable alternative, and so, in the end, our training program was established at a large polyclinic in Karakol.

But we were fortunate to have ended up in this location. The polyclinic housed two family group practices (FGP), which comprised a total of seven physicians, and which were responsible for the care of 9,000 patients. We decided to transform these family

practices into a training center. In this way, all the work required to set up a functioning clinic with a loyal patient population had already been done for us, and we were able to avoid long delays associated with remodeling. We could get started immediately. Also, the costs of our training program were substantially lower than we first anticipated. It was necessary to change offices and reorganize the delivery of care in the FGPs, but the changes were instituted with surprisingly little difficulty, perhaps because we already had established good relationships with the FGP physicians and had earned their trust.

The *minimum* number of physicians we felt we needed to train was six—two from each of the three FGP specialties (internist, pediatrician, and obstetrician-gynecologist)—so that if one of the physician-trainers left before completing the program (for whatever reason), we would have at least one other of similar qualifications to depend on. On the other hand, six or seven also was the *maximum* number of physicians we felt we could train, on account of severe space limitations within the polyclinic. Physicians were selected for training, on the condition that they agreed to serve as trainers for at least 1-2 years following their completion of the program. Thus, we had to train not only good family physicians, but good family physician *trainers* as well.

We obtained permission from the chief physician of the polyclinic to build a barrier across a hallway in the polyclinic, in order to create a pleasant, well-lit waiting room where we set up chairs and tried to imitate the typical American family medicine office waiting room. We hoped to increase the privacy of patients, by reducing their tendency to congregate outside of the physicians' examination room and periodically to open the door to see if it was their turn to be seen. Unfortunately, we spent a lot of energy trying to persuade patients to remain in the waiting area until they were called, but we achieved only limited success.

From the beginning, we concentrated on educating our patients regarding the purposes of the training center, so that they would understand what we were trying to do, and so that they would help us by coming to us with their common problems in the fields of orthopedics, skin surgery, otolaryngology, ophthalmology, dermatology, neurology, and psychiatry, instead of by-passing us and seeking care directly from specialists at the polyclinic. We delivered by hand to the home of each of our patients a brochure explaining what family medicine was and what we were trying to do at the *Center for Excellence*. This "public education" had a limited amount of success, but we understood that more than a single brochure is required in order to change behavior that has been learned over many decades.

We encouraged our patients to choose a single physician who would then provide care for the whole family. We quickly discovered, however, that although the gynecologists were our busiest specialists—each seeing up to 35 patients per half day—few people preferred a gynecologist to serve as their family physician. In practice, most of our patients continued to follow the same patterns of self-referral as in the past.

Our shortage of space was made worse by regulations of the public health authorities—the Sanitary Epidemiological Station, or SES. SES rules require that a separate room be dedicated to immunizations, and they forbid intramuscular injections to be given in a regular examination room or in the immunization room. SES rules require that ill patients cannot be seen in the same room as well patients, and that sick children cannot be seen in the same room as pregnant women, even if they are not seen simultaneously. A separate room is required for sterile procedures; and sick children are not allowed in the waiting room. The SES also interrupted our program from time to time, by ordering two-week immunization campaigns which took 2-3 physicians out of the clinic in order to immunize patients in schools and homes scattered widely over the city.

2.0 Family Physicians in the United States

In order to understand and appreciate my observations on the efforts to strengthen primary care and to train family physicians in Kyrgyzstan, the reader may find it helpful to know more about the changing role of family medicine in the United States.

Approximately 20 years ago, the health care system in the United States faced a situation that was similar in certain key respects to that which exists today in Kyrgyzstan and in the other NIS. Primary health care services were very weak, while most medical care was provided by specialists. As the cost of medical care increased rapidly, Americans were compelled to consider the relative *economic* effectiveness of the different treatment methods that were used. Previously, the economic cost of health care had not been of great concern. Diagnostic tests were ordered without much regard for their cost, and hospital stays were much longer than they are currently.

As concern with the cost of health care increased, physicians began to order tests more selectively and to search for ways to reduce major costs such as hospital care. More importantly, a growing number of specialists realized that strong primary health care services offered a means of providing high quality medical care at lower cost. A patient with abdominal pain, a skin problem, or depression could receive care for all of these problems from a *single* family physician, instead of having to see three different physicians at three times the cost. Meanwhile, other "referral" specialists (e.g. urologists, endocrinologists, dermatologists) could focus their attention and energy on patients with relatively complex and uncommon problems.

In 1976, the first family medicine training programs were established; these require three years of additional, broad training following the completion of medical school. Training in family medicine is of a similar depth and duration as that given to other specialists and is much more extensive than the one year previously required of the "general practitioner." In the United States, all physicians receive very broad medical training during their four years of medical school and generally do not focus on a specialty until they begin post-graduate training. The first year of a family medicine training program usually is focused mainly on hospital-based inpatient care, although two afternoons each week may be reserved for work in a model family medicine outpatient clinic. The second

and third years of the program become progressively more focused on outpatient care in the model clinic, where each physician-in-training is assigned his or her own panel of patients.

During their three years of training, family physicians-in-training have an opportunity to treat a wide variety of outpatient and inpatient conditions and problems. Very often, the physicians have questions concerning the diagnosis or optimal treatment of a particular problem, and in the model family medicine clinic there is always a faculty member available with whom the physician-in-training can consult. After completing the three-year training period, family physicians either open their own business or, more commonly, join an established group practice of family physicians.

Family physicians in the United States care for a wide variety of medical problems, and the quality of their services are just as high as those provided by the other specialties. Family physicians are able to care for common cases of hypertension with skill equal to that of a cardiologist. They care for vaginitis and family planning needs with skill equal to that of a gynecologist. They care for common skin lacerations with the skill of a surgeon and can cast a common ankle fracture with the skill of an orthopedist. They perform flexible sigmoidoscopy as well as the gastrointestinal specialist; and they treat common children's problems as well as a pediatrician.

They treat upper respiratory infection, including otitis media and sinusitis, acute bronchitis, hypertension, diabetes, asthma, allergies, vaginitis, and urinary tract infections. They perform a variety of procedures in their offices: EKG interpretation, chest and long bone x-ray interpretation, pulmonary function testing, oximetry, tympanometry, indirect and direct laryngoscopy, allergy skin testing, the casting and splinting of common fractures, treatment of abrasions of the cornea, pap smears, pelvic exams, endometrial biopsies, and examinations required for drivers' licenses and for entry to schools and universities. Most family physicians perform minor surgeries in their offices and assist with major surgeries in the hospital. Most care for their own patients in the hospital, e.g. in case of pneumonias, pyelonephritis, congestive heart failure and dehydration, and chest pain possibly indicative of myocardial infarction. Many perform exercise electrocardiography and vasectomy and evaluate vaginal and cervical lesions with culposcopy. A significant number provide complete obstetric care of low risk pregnancy, including spontaneous vaginal delivery and forceps and vacuum vaginal delivery in the hospital.

How can one physician do all of these things so well? The key word is "common." ***The family physician is a specialist in problems that are common.*** If there were no family physicians, the gynecologists would tire of all the common cases of vaginitis they would have to see; the surgeons would tire of all the common skin lacerations they would have to suture; and the cardiologists would throw up their hands in frustration at all the cases of common high blood pressure. Family physicians do not grow bored with all of the common problems they see, because they treat common problems *across all specialties*. And because they see such problems often, family physicians become expert at caring for

them. A good balance between family physicians and referral specialists allows the talents of all physicians to be used with maximum effectiveness.

3.0 Comparison Between Family Physicians and FGPs

Although the group practice reforms now being implemented in Kyrgyzstan will strengthen considerably the range and quality of primary health care services, there are, nevertheless, a number of reasons why a system based on well-trained family physicians probably would be more effective, both clinically and economically, than a system based on FGPs.

1. The coordination and continuity of medical care would be improved. Three physicians rarely function so well as a team that they are able to coordinate a patient's medical care as well as one physician can alone. A physician who knows the patient's entire medical history well, and who knows the family and social situation of the patient, can make the best decisions in arranging for specialist consultations and diagnostic testing, and for ensuring there are no conflicts among the medications that different specialists may prescribe.

2. The personal relationship between physician and patient would be improved. A single physician who cares for the entire family can build relationships with the family as a whole and with each family member individually. The family physician sees the family three times as often as the individual FGP physician and has a better chance to build patient trust and confidence. A family physician providing care to one family member can inquire about other members and thereby gain a fuller picture of the course of a prolonged illness and its true impact on the patient. The family physician's ability to evaluate psychological and emotional problems is superior to that of the FGP doctor. With the family's trust and respect, the family physician specialist is better able to elicit help from other family members in treating a difficult patient or an elderly senile patient.

3. Gynecologists may abandon the FGPs, as they grow tired of so narrow a specialty. The field of obstetrics and gynecology is rich in its variety of experiences, but much of this variety is associated with hospital care, in particular, the opportunity to perform surgical procedures and to interact with other specialists. Gynecologists who are limited to outpatient practice soon find their work quite repetitive, with few challenges, and their intellectual talents largely wasted. On the other hand, if outpatient gynecologists are given the opportunity to learn and to practice the full spectrum of family medicine, they will be used much more effectively, and their particular skill and experience in gynecology will make them especially valuable members of a group of family physician specialists.

4. An FGP physician will not see a family as often as a family physician and will thus have fewer chances to practice preventive medicine: e.g. periodic health exams, immunizations, and health education.

5. The family physician specialist will be able to practice medicine with greater economic effectiveness. Family physicians know their patients better and are more familiar with their patients' care, because they coordinate every aspect of that care. Because they alone are responsible for their patients' medical records, those records are generally more complete and accurate than in cases when responsibility is spread among multiple physicians. Better knowledge and a more accurate patient record are likely to permit family physicians to provide better care in a shorter amount of time, compared to FGP physicians. Also, because family physicians are likely to understand their patients' financial situation, they can order tests and medications with a better idea of whether the patient can afford them.

6. Patients will not have to spend as much time and money visiting different physicians because they have one physician who is able to care for the large majority of their medical problems.

These statements do not lessen the importance of FGPs as means by which the current medical system, which is oriented mainly toward specialist care, is transformed into a system based on strong primary care model. Without the FGPs, there would be little effective movement towards primary care; FGPs have created momentum that is now moving Kyrgyzstan in the direction of genuine health care reform.

4.0 Requirements for Training FGP Physicians in Issuk-kul Oblast

Although practitioners of the three specialties within the FGP—gynecology, pediatrics and internal medicine—receive some re-training, they remain specialists and together comprise a field of knowledge that is narrower than the scope of family medicine. Beyond the current range of these three specialties, family medicine includes common problems in orthopedics, minor surgery, dermatology, venereology, psychiatry, otolaryngology, ophthalmology, neurology, the treatment of common problems with tuberculosis and HIV infection, and often the treatment of drug and alcohol abuse. Currently, most patients in Kyrgyzstan with these problems either bypass the FGP or are referred to specialists by FGP physicians. All are areas in which training is needed.

More specifically, the gynecologists seem well grounded in anatomy and reproductive physiology, but they do not know how to perform an adequate PAP smear. They do not know the pros and cons of postmenopausal estrogen replacement therapy and how to prescribe estrogen replacement therapy. They do not have access to microscopes, in order to do vaginal wet mounts, so they can treat vaginitis only empirically. They use the correct anti-infective agents for vaginitis but do not seem to know what organisms they are targeting with the medicines. They have adequate experience with IUDs but do not have enough experience in dealing with problems encountered in the management of Depoprovera contraception. They refer these problems to the gynecologist-specialists at the Woman's Consultation Center. They have very limited knowledge of oral

contraceptives, but this may not be of urgency since patients seem to prefer IUDs and Depoprovera.

The gynecologists do not seem to provide any significant care and advice to patients who wish to become pregnant. They cannot check blood tests for rubella or immunize their patients against rubella, so they are not able to prevent congenital rubella syndrome. Without Rh immune globulin, they can do little to protect the children of Rh negative women. Prevention of Hepatitis B transmission from mother to fetus is hampered by the lack of appropriate immunizations. Postdates pregnancies are treated with excessive periods of hospitalization, but not overly aggressive attempts to promote delivery. Vaginal cultures apparently are being taken as a part of routine prenatal care, but the bacteriology labs are not reporting *any* cultures that are positive for group B streptococcus, which is the leading cause of neonatal sepsis in the United States (where such cultures are positive for between 5-40 percent of pregnant women, depending on the study). It is unlikely that this bacterium is absent in Kyrgyzstan.

Pediatricians see most of their sick patients during home visits, usually without having an otoscope to evaluate for otitis media. Indeed, most FGP physicians have very little experience, using either the otoscope or the ophthalmoscope. They do not check red reflexes during well-child examinations, leaving eye evaluation entirely to the ophthalmologists. In their offices, pediatricians primarily provide child care; yet, in the case of as many as 90 percent of patient visits, they are required to make some kind of specialist referral. Pediatricians—indeed, all the FGP doctors—must be trained to evaluate their patients for common eye, ear, neurologic and surgical problems. This would make much better use of their intellectual talents, and free the ophthalmologists, otolaryngologists, surgeons and neurologists from work that does not utilize their specialist talents. Examinations for entry to schools and universities, as well as driving license exams, constitute a terrible waste of the specialist's time and should be the responsibility of family physicians.

Internists in FGPs appear to be treating high blood pressure much more often than they would if their patients were taking their anti-hypertensive medications appropriately. All FGP physicians need to be taught to work more closely with their hypertensive patients to keep blood pressures stable. Episodic or irregular treatment of chronic hypertension is more dangerous to the patient than no treatment at all. Physicians also seem uncomfortable in instructing their asthma and bronchospastic emphysema patients in the proper use of metered dose inhalers. They tend to rely on medications with significantly greater side effects and lesser efficiency: oral theophylline and oral beta agonists.

An usually frequent problem presenting to FGP physicians is right upper quadrant abdominal pain. These patients often are given the diagnosis of chronic cholecystitis on the basis of history alone. Often they are sent for abdominal ultrasound, which may or may not confirm the diagnosis, although I would not be fully confident of the results of the small, old-style ultrasound machines that are used today in Karakol. Because of a mistaken notion that a normal ultrasound means an absence of liver pathology, a set of

liver enzyme is seldom ordered, while alkaline phosphates are not available in Karakol. The only hepatitis marker available locally is a Hepatitis B surface antigen. With such limited diagnostics available, physicians cannot accurately evaluate what is really going on with the right upper quadrant pain. Unproven bile analysis diagnostics and "biliary lavage" therapeutic maneuvers are performed with some apparent success in reducing the abdominal discomfort. It would be interesting to organize a diagnostic study of right upper quadrant pain in Karakol in order to better understand why this complaint occurs so frequently.

Internists seldom use antacids and H2 blockers for empiric treatment of dyspepsia, because they have been told that dyspepsia usually is associated with a low acidity state rather than a high acidity state. There is a possibility that genetic differences could make Central Asia gastric physiology different from other races, but I am inclined to doubt this. This area, too, would constitute a good subject for scientific study and probably would not require an especially complicated research design.

Physicians in Issuk-kul Oblast generally are not familiar with the generic names of most medications and, as a result, sometimes give their patients twice the therapeutic dose of a medicine, not knowing that two medicines with different names are actually the same drug. They may also give two medications from the same pharmaceutical class, thus raising the risk of side effects. It is common for patients to receive three medications for a given medical problem, when one or two medications would have sufficed. Patients have come to expect this and may not feel they have received proper care *unless* they have been prescribed several medications.

Patients have also come to associate intramuscular injections with the highest quality treatment. An instance when this mode of treatment is most dangerous is when gentamycin is used to treat outpatient infections. Gentamycin is usually most appropriate for infections treated in the hospital. In Issyk-kul, gentamycin is used to treat outpatient infections, often to eliminate a staphylococcus infection. In fact, gentamycin is only effective as an adjunctive antibiotic to more powerful antistaphylococcal drugs, and should *not* be used alone for staphylococcal infections. Oxacillin is available in Karakol as an oral and parenteral medication, and would be much more effective and much less dangerous than gentamycin. Issyk-kul physicians have no blood tests available in order to monitor gentamycin levels; as a result, they could be causing their patients, especially the elderly, permanent sensorineural hearing loss and chronic kidney insufficiency.

FGP physicians need training in what bacteria are most likely to be responsible for a given infection, so that they can make wise empiric antibiotic choices while waiting for results of cultures. This is especially important, inasmuch as results frequently are not returned for as long as 10 days after the culture is sent to the lab. FGP physicians often use two antibiotics, when one would be enough, thus increasing the likelihood of drug interactions and of side effects such as pseudomembranous colitis.

As is true elsewhere in the NIS, unproven therapies are common in Karakol. Most of these therapies are not harmful, but they exact a financial cost and divert extremely scarce resources away from other, *proven* therapies. For example, ultraviolet light treatment seems to be used to treat almost anything. I once had to explain to one of Karakol's best physicians that even if ultraviolet light were an effective way of treating sinusitis, there is no good way actually to deliver the ultraviolet light past the skin and bone of the face to the depth of the sinuses.

The dermatology textbook used most often by the local dermatologists describes the treatment of common skin problems with methods that are both expensive and potentially dangerous. For example, so-called "auto-infusion" therapy—where blood is removed from the arm and then re-injected into the same patient's buttock—has the potential of causing a crippling deep buttock infection. Another potentially dangerous situation arises from the tendency to use heparin ointment for deep venous thrombosis. Since this mode of treatment will not effectively treat deep venous thrombosis, its use may inadvertently heighten significantly the risk of pulmonary embolism and death. Kyrgyzstan cannot afford to pay for these kinds of treatment, neither financially nor clinically.

Training in critical scientific thinking would be helpful. An analysis of the statistical validity of published articles in medical journals would encourage FGP physicians to exercise their own judgment and to view more skeptically unproven pronouncements by official medical "authorities." An opportunity to perform their own, small scale medical research projects could be extremely valuable experience for these physicians.

Finally, a family medicine training program should include instruction in the "art" of medicine. Family physicians should be skilled in "customer service" and the analysis of patients' "hidden agendas." They should know how to cope with an angry or otherwise difficult patient, and how to make the patient a member of the "team" providing his or her own medical treatment.

5.0 Training Methods

The foundation of the training program at the *Center for Excellence* is the model clinic. Each day, we begin with a one-hour lecture (from 8:30 to 9:30 AM). Then, we examine patients for three hours, followed by a one-hour lunch break, after which we examine patients for another hour (from 1:30 to 2:30 PM). We end the day with a 90-minute combined lecture-and-discussion of one or more specific cases. The afternoon didactic session is intended to be a relaxed, informal discussion, during which physicians are able to ask any questions they want, whatever they may be.

5.1 Curriculum

We lecture first about high frequency medical problems as well as primary care topics that are outside the combined scope of the three specialties represented in the FGPs. We start by spending two weeks on prenatal care, followed by a week on well-child and

newborn care, including a trip to the newborn nursery at the Maternity Hospital. We then spend two and one-half weeks on dermatology; three weeks on gynecology; two weeks on cardiology, including two days of lectures and a day and a half electrocardiography workshop by a visiting cardiologist from Bishkek. We spend a week on pediatric infections, a week on ophthalmology and otolaryngology, and two and one-half weeks on orthopedics. (A more detailed version of the lecture curriculum is presented in the Annex.) Once a week, we evaluate three different EKGs as a group.

Because local physicians are being trained to serve as *trainers* of family medical specialists, they are given increasingly frequent opportunities to present their own lectures. Shortly before I left Karakol, we invited one physician from each of the 81 FGPs in the oblast to participate in a three-day family medicine conference; in all, 60 physicians were able to attend. Each of the Center's physicians-in-training were given an opportunity to present a lecture. Some of the physicians were more relaxed and more coherent in their presentations than others. Some even made their first stabs at imitating my style, by posing frequent questions designed to keep the audience thinking and to assess how much the audience understood. Others were unable to shed the more typical lecture style of reading rapidly from notes and avoiding eye contact with the audience. A videotape of the conference now is being circulated among Issyk-kul FGPs.

When I left Karakol, physicians at the Center had begun making brief, 10-minute presentations three times per week at administrative meetings, and were leading a weekly 90-minute teaching session for Karakol physicians each Wednesday afternoon. We devoted a certain amount of our own teaching time to helping these future trainers to practice their lecturing style and to formulate good questions. In order to encourage other FGP physicians to attend these lectures and to listen attentively, we designed tests that the FGP physicians must complete during one-to-four-week time periods, which is how long it takes us to cover the material being tested during our Wednesday lecture sessions. In the future, the lecture curriculum may be expanded to include monthly "mini-conferences" at more distant sites around Lake Issyk-kul; and once each quarter, one physician from each FGP may be invited to attend a larger conference in Karakol.

5.2 The "Learning-By-Doing" and "Precepting" Methods

General and family medicine normally are taught most effectively in a clinical setting, in which future specialists are able to treat real illnesses and provide care to real patients, under the supervision of an experienced instructor. Unfortunately, it has been more difficult to organize good clinical training than to present lectures, mainly because we have not yet established a full "fund-holding" financing system—which would create strong incentives for FGP physicians *not* to refer their patients to specialists—and because many patients with the most interesting medical problems continue to bypass us and to seek care from specialists directly.

During a typical week, I was asked to "precept," that is, to accompany the attending physician, on visits to 3-4 patients. Occasionally, I did unsolicited precepting, by visiting

the physicians' examination rooms during patient care hours. Because patients generally still prefer to take their gynecology problems to gynecologists, their pediatric problems to pediatricians, and their internal medicine problems to internists, each doctor tends to see mainly medical problems that she or he already is quite familiar with and, as a result, often does not see any need for precepting.

We began to see some families who understand the meaning of family medicine and who bring their entire family to see a single physician. But this phenomenon still is uncommon. We also experienced success in broadening patients' exposure to general medicine, by establishing a rotation system in which a pediatrician is allowed to work in the place of a gynecologist, who works in the place of an internal medicine doctor, who then works in the place of the pediatrician. Gynecologists can thus act as preceptors for physicians in the other two specialties; and the other two specialties likewise can precept in their own fields. This is one of the great advantages of a training program that trains physicians who already have at least 10 years of experience in their particular fields. I do not know precisely how much of this "cross-precepting" is taking place, but often I was told what one physician had advised another, and sometimes I was asked for my opinion when there were disagreements.

I emphasized to physicians at the *Center for Excellence* that they should do all they can, in order to gain exposure to new medical problems they have not treated previously. I asked them to do as thorough a job as possible in examining patients with unfamiliar problems and to develop as much as possible their diagnosis and plan for treatment, before coming to me for help. Our first group of family medicine trainers may need more than a year, to gain the breadth of experience required to become true family physicians, but they will clear the way for those who follow.

There is one additional method that we have used as a means of encouraging physicians to learn by practical, clinical experience. We developed a list of medical procedures that lie outside each physician's narrow specialty, which *all* physicians, regardless of specialty, must demonstrate they can perform competently. For example, internists and pediatricians must document that they have inserted three IUDs under the direction of a gynecologist, who must sign a statement of confirmation. We also developed a list of medical problems that *all* physicians, regardless of specialty, must be able to report real experience in helping to manage. For example, pediatricians, internists, and gynecologists all must document that they instructed three patients successfully in the use of a metered dose inhaler. We hope that, by setting these goals, we will encourage physicians to take an active, independent role in their own training.

6.0 The Provision of Care in Patients' Homes

While examining statistical data during the summer of 1996, we discovered that visits to patients' homes comprise one half of each physician's work time and one third of his or her patient visits, which is a substantial percentage of physician resources. Our curiosity piqued, we accompanied several physicians during home visits, some of which seemed to

us to serve more of a social than a clinical purpose. The physician who visited the home usually took only a stethoscope and no other diagnostic equipment. Every one of the patients we saw easily could have walked to the polyclinic. We saw no significantly ill or crippled patients; indeed, all had minor illnesses. After the *Center for Excellence* was established, we paid close attention to the number of requests by patients for home visits. We found that the number of these requests generally was than a fourth of the number of home visits actually made by the FGP physicians.

So, why are physicians visiting patients' homes three times as often as they are requested to do so? We were never able to develop a fully satisfactory explanation. But it is clear that if physicians' salaries are increased significantly, e.g. following introduction of an adequately-financed fund-holding system, physicians will need to use their time as efficiently as possible; thus, means must be found to reduce the number of unnecessary home visits. Slowly, the public's expectations need to be changed so that home visits are made only to those patients who truly need the visits, and not for the purpose of treating minor illnesses in otherwise healthy patients.

When the *Center for Excellence* opened, we advertised for a feldsher who might be able to help the Center's physicians reduce the amount of time they devoted to home visits, by substituting for the physicians in certain cases. We also thought it would be interesting to examine how physicians and feldshers can work together caring for the same population. To our surprise, no feldshers answered our newspaper advertisement. Instead, a resuscitation specialist answered the advertisement; and she has since performed almost all of the home visits to the Center's patients. She works three hours per day outside of the polyclinic. Some days, she may make only three visits; other days, she may have 15 home visits to make and may work five hours or more. We tried to identify those patients who truly need a home visit, although many patients who do not meet our criteria continue to demand a home visit. Mothers with sick children are especially reluctant to take them out into the cold in order to visit the physician's office. On the other hand, some patients with minor problems have responded well to advice given over the telephone.

Our home visit specialist has taught the Center's receptionists to screen telephone calls for complaints that probably can be handled adequately with instructions provided over the telephone. The receptionists also have been trained to listen for complaints that may require a response by the city's ambulance service. After helping with phone calls in the mornings, the home care specialist performs home visits in the afternoon. She normally takes with her a stethoscope, blood pressure cuff, otoscope, and thermometer, as well as paracetamol and nitroglycerin tablets.

7.0 Monitoring the Availability of Medicines

The pharmaceutical sector in Issuk-kul Oblast has been transformed from a system of state-owned pharmacies to a network composed mainly of small, privately-owned pharmacies, most of which have a very small inventory. There also are still three state-

owned pharmacies, including one in the pediatric polyclinic and one in the Oblast Hospital. Very often a patient obtains a prescription from a physician and must visit several different pharmacies in search of the particular medicine, not always successfully.

One of the most common problems I faced in training physicians in Issyk-kul was that often I did not know what medications were available locally; and sometimes even the local physicians did not know or could not remember where a particular medicine might be found. In order to develop systematic information on the availability of medicines, the Zdrav*Reform* Program developed a list of the most essential and least expensive medicines used in primary care. Beginning in December 1996, physicians from the *Center for Excellence* and I used this list to survey the majority of Karakol's pharmacies. The biggest difficulty we encountered was not collecting the information, but, rather, ensuring that the medicines were categorized properly—i.e. listed alphabetically under the proper, internationally-accepted drug classifications—and then confirming which pharmacies had the given medicines in stock, the dosage form of the medicines, and the price. In contrast to most other products offered for sale in Karakol, for which prices generally are similar, prices of medicines differed significantly among the different pharmacies. Fortunately, nearly every drug on the Zdrav*Reform* "Essential Drug List" was available in one or another of the city's pharmacies, although certain eye medications could be obtained only from ophthalmologists and medications for diabetes could be obtained only from endocrinologists.

Our intention is to provide each FGP physician in Karakol with a laminated copy of the drug survey, which will be updated regularly. This should help to improve physicians' decisions about the best course of treatment to follow; and it should help patients to find the best priced drugs in the most conveniently located pharmacy. The result should be improved compliance by patients with their treatment and improved relationships between patients and their physicians.

8.0 The Scope of Family Medicine in Kyrgyzstan

The scope of family medicine in Kyrgyzstan—that is, the range of problems that family physicians should be capable of treating—is only beginning to evolve. This scope will be shaped by economic conditions which, for example, currently make it impossible for most family physicians to have access to EKG machines, x-ray machines, nebulizer equipment, or even rigid sigmoidoscopy. The scope of family medicine also will be affected by political forces within the medical community, including, for example, resistance from some specialists who may not realize the freedom from drudgery that family medicine could bring. The scope of family medicine may be narrowed further by the lack of assertiveness and critical thinking that were common before independence, and that make it difficult for physicians to break old patterns of subservience to authority.

The scope of family medicine in Kyrgyzstan is likely to be in a state of flux for the next 10-15 years. Thus, it is difficult at this point to recommend a precise curriculum for family medicine training in the Republic. The best course probably is to avoid teaching

procedures, as well as the diagnosis and treatment of particular problems, which are unlikely to be needed or encountered in actual practice during the next five years. Later on, as economic and sociopolitical conditions improve, the scope of family medicine will need to be expanded further.

Annex: Lecture Curriculum at the Center for Excellence

I. Prenatal Care

A. Screening for Disease in Pregnancy
   1. Infectious Diseases, including Rubella, Syphilis, Gonorrhea, Hepatitis B, Toxoplasmosis, Herpes Simplex, HIV, Chlamydia, Group B Streptococcus, and UTI
   2. Hemolytic Disease of the Newborn
   3. Anemia
   4. Gestational Diabetes

B. Assessment of Gestational Age and Fetal Growth

C. Discomforts of Normal Pregnancy

   Includes nausea and vomiting, heartburn, constipation, hemorrhoids, swelling and variocosities, leg cramps, fatigue, urinary symptoms, numbness, dizziness, and fainting, shortness of breath, rhinitis, pigmentation, striae gravidarum, bleeding gums, breast changes, headache, and vaginal discharge.

D. Impact of Pregnancy and Childbirth on the Family

E. Patient Education to Improve Safety During Pregnancy
   1. Danger Signs During Pregnancy
   2. Medications and Pregnancy
   3. Physical Activity and Diet
   4. Nicotine and Alcohol Exposure

F. Complications of Pregnancy
   1. Early Pregnancy Bleeding
   2. Late Pregnancy Bleeding
   3. Pregnancy Trophoblastic Disease
   4. Polyhydramnios and Oligohydramnios
   5. Gestational and Overt Diabetes
   6. Hypertensive Disorders of Pregnancy
   7. Preterm Labor
   8. Premature Rupture of Membranes
   9. Twin Pregnancy
   10. Intrauterine Growth Retardation
   11. Postdates Pregnancy
   12. Helping Families Cope with Pregnancy Loss
   13. Rh Isoimmunization
   14. Dermatoses of Pregnancy

II. Newborn Care

A. Physiologic Changes During and After Birth
B. Neonatal Resuscitation
C. Physical Examination of the Newborn
    This includes a trip to newborn nursery at maternity hospital to practice exam skills
D. Neonatal Problems
    This includes hypoglycemia, hyperbilirubinemia, sepsis, seizures, meconium staining and respiratory distress
E. Circumcision
F. Infant Feeding
    l. Weight Gain and Necessary Nutrients
    2. Breast-feeding
    3. Bottle-feeding
    4. Weaning and Introducing Solid Foods
G. Bathing and Cord Care
H. Immunizations
I. Parent Education to Avoid Problems
J. Family Adjustment to the Newborn
K. Crying, Colic, and Diapers
L. Screening Tests for Metabolic Diseases

III. Well-Child Care

A. Growth and Development
    l. Use of Growth Charts and Failure to Thrive
    2. Neurologic Changes During the First Five Years
        a. Changes in Reflexes
        b. Speech and Language Development - Normal and Pathologic
        c. Visual Development and Vision Screening
        d. Balance, Coordination and Fine Motor Skills
        e. Treatment of Developmental Delay
    3. Dental Changes
B. Educating Parents about Child Safety
    l. Drowning, Burns, Falls, and Choking in the Newborn
    2. Dangers of Movement and Climbing - Toddlers
    3. Children and Dogs, Bicycles, Drowning and Lead Poisoning
C. Common Parental Concerns
    This includes constipation, feeding problems, sibling rivalry, and child discipline
D. Immunizations
E. Child Malnutrition and Anemia

IV. Dermatology

A. Basic Skin, Anatomy and Physiology
B. Describing Skin Lesions - Terminology
C. Basics of Dermatologic Therapy
D. Sunburn, Photosensitivity, and Chronic Sun Damage
E. Psoriasis, Pityriasis Rosea, Pityriasis Alba
F. Dermatophytic Infections
G. Exanthems
H. Urticaria
I. Pruritis
J. Pyodermas
K. Benign New Growths
L. Premaliganant and Malignant Growths
M. Hair and Nail Problems

V. Gynecology

A. Gynecologic Anatomy and Examination
B. Gynecologic Endocrinology
C. Amenorrhea
D. Abnormal Vaginal Bleeding
E. Menopause
F. Contraception
G. Infertility
H. Dysmenorrhea, The Premenstrual Syndrome, and Ovarian Cysts
I. Endometriosis, Adenomyosis, and Leiomyomas
J. Pelvic Inflammatory Disease
K. Vaginitis, Vulvitis, and Endometritis
L. Sexually Transmitted Diseases
M. Ectopic Pregnancy
N. The Breast
O. The Pap Smear and Cervical Cancer
P. Endrometrial, Ovarian, and Vaginal Cancer
Q. Acute and Chronic Pelvic Pain

VI. Cardiology

A. Hypertension
    1. Definitions
    2. Diagnosis
    3. Lifestyle Modifications
    4. Medications and Patient Compliance
    5. Special Situations
    6. Hypertensive Emergencies

B. Coronary Artery Disease
    1. Coronary Artery Anatomy and Physiology
    2. Risk Factors
    3. Problems in the Diagnosis of Chest Pain
    4. Diagnostic Tests
    5. Prevention and Prophylaxis
    6. Medical Management
    7. Surgical Management
C. Myocardial Infarction
D. Congestive Heart Failure
E. EKG Interpretation and Arrhythmia
F. Valvular Heart Disease, Congenital Heart Disease, Rheumatic Fever, and Endocarditis
G. Peripheral Vascular Disease
H. Thrombophlebitis and Pulmonary Embolus
I. Basic Cardiac Resuscitation

VI. Pediatric Infections

A. Viral Nasopharyngitis
B. Otitis Media and External
C. Croup, Bronchitis, and Brochiolitis
D. Tonsillopharyngitis and Epiglottitis
E. Periorbital and Orbital Cellulitis
F. Gastroenteritis
G. Urinary Tract Infections
H. Meningitis and Encephalitis
I. Neonatal Sepsis and the Febrile Infant

VII. Rheumatology

A. History and Physical Exam
B. Laboratory Evaluation
C. Rheumatoid and Juvenile Rheumatoid Arthritis
D. Systemic Lupus Erythematosis
E. Seronegative Spondyloarthropathies
F. Crystal-Induced Arthritis
G. Osteoarthritis
H. Fibromyalgia

VIII. Ophthalmology

A. Anatomy and Physiology
B. Eye Examination
C. Eye Conditions in Infants and Children

D. Glaucoma
E. Red Eye Conditions
F. Painful Eye Conditions
G. Conditions Causing Visual Disturbance and Loss
H. Eye Emergencies
I. Eye Medications
J. Systemic Medications Affecting the Eyes

IX. Orthopedics

A. Cervical Strain and Disc Disease
B. Thoracic Outlet Syndrome
C. Shoulder Bursitis, Tendonitis, and Acromioclavicullar Injury
D. Epicondylitis, Olecranon Bursitis and Nursemaids' Elbow
E. Wrist and Hand Problems
    1. Carpal Tunnel Syndrome
    2. De Quervain's Tenosynovitis
    3. Scaphoid Fracture and Lunate Dislocation
    4. Distal Forearm Fractures
    5. Hand Infections
    6. Extensor Tendon Injuries
    7. Flexor Tendon Injuries
    8. Trigger Finger
    9. Ganglion Cysts
    10. Dupytren's Contractures
    11. Techniques of Joint Aspiration and Injection, Digital Anesthesia, Splinting and Casting
F. Thoracic and Low Back Pain
    1. Anatomy
    2. Physical Exam
    3. Danger Signs for Referral
    4. Exercise and Back Pain Conservative Therapy
G. Hip Bursitis and Arthritis
H. Knee Injuries
    1. Anatomy
    2. Osgood-Schlatter's Disease
    3. Osteochondritis Dissecans
    4. Knee Bursitis and Basker's Cyst
    5. Patello Femoral Dysfunction
    6. Osteoarthritis
    7. Patellar Dislocation
    8. Collateral and Cruciate Ligament Injuries
    9. Meniscus Injuries

I. Ankle and Foot Problems
    1. Anatomy and Physiology
    2. Ankle Sprains
    3. Toe Fractures
    4. Calluses and Corns
    5. Plantar Warts
    6. Improper Shoes
    7. Metatarsalgia
    8. Heel Pain
    9. Diabetic Feet

X. Otolaryngology

A. Common Ear Problems
    1. Anatomy and Physiology of the Ear
    2. Examination and Testing of the Ear
    3. Causes of Ear Pain
    4. Causes of Plugged Ear
    5. Causes of Otorrhea
    6. Dizziness and Vertigo
    7. Hearing Loss and Tinnitus
B. Bell's Palsy
C. Nasal and Sinus Problems
    1. Anatomy and Examination
    2. Acute and Chronic Rhinitis
    3. Acute and Chronic Sinusitis
    4. Allergic and Vasomotor Rhinitis
    5. Nasal Polyps and Foreign Bodies
    6. Nasal Trauma
    7. Disorders of Smell
    8. Nosebleeds
D. Throat and Pharynx Problems
    1. Causes of Sore Throat
    2. Hoarseness
    3. Salivary Gland Disorders
    4. Neck Masses

XI. Neurology

A. The Neurologic Examination
B. Headache Differential Diagnosis
C. Parkinson's Disease and Movement Disorders
D. Pain, Spasm and Cramps of Muscle
E. Acute Confusional States and Dementia
F. Disorders of Sleep

G. Numbness, Tingling, and Sensory Loss
H. Seizure Disorders
I. Strokes
J. Demyelinating Diseases
K. Nutritional Metabolic Diseases of the Nervous System
L. Alzheimer's Disease

XII. Behavioral Medicine

A. The Psychiatric Examination
B. Common Behavioral Problems of Children
C. Marriage, Mid-life Crisis, and Menopause
D. Major Depressive Illness and Suicide
E. Anxiety Disorders
F. Personality Disorders
G. Schizophrenia and Thought Disorders
H. Drug and Alcohol Abuse
I. Smoking Cessation
J. Eating Disorders
K. Dealing with Chronic Illness and Disability

XIII. Gastrointestinal System

A. Esophageal Problems
B. Peptic Ulcer and Gastritis
C. Cancers of the Esophagus and Stomach
D. Disorders of Absorption
E. Inflammatory Bowel Disease
F. Acute Intestinal Obstruction
G. Acute Appendicitis
H. Hepatitis
I. Diagnostic Tests in Liver Disease
J. Liver Cancer
K. Disorders of the Gallbladder and Bile Ducts

XIV. Respiratory Problems

A. History, Exam and Diagnostic Procedures
B. Asthma
C. Pneumonia
D. Chronic Bronchitis and Emphysema
E. Lung Cancer

XV. Surgery

A. Wound Care and Suturing
B. Burns
C. Acute Abdominal Pain
D. Local and Digital Anesthesia
E. Thrombosed Hemorrhoids
F. Incision and Drainage of Abscesses

XVI. Pharmacology and Drug Therapy

A. Pharmacokinetics
B. Adverse Drug Reactions
C. Drug Interactions
D. Drug Use in Children, Pregnancy, and in the Elderly
E. Compliance by Patients
F. Generic Substitution
G. Antibiotics

XVII. Infectious Diseases

A. Sexually Transmitted Diseases
B. Urinary Tract Infections
C. Gram Positive Infections
D. Gram Negative Infections
E. Tuberculosis
F. Viral Diseases
G. Fungal Infections
H. Protozoal and Heminthic Infections

XVIII. Kidney and Urinary Tract

A. Acute and Chronic Renal Failure
B. Glomerulonephritis
C. Tubulointersitial Diseases
D. Vascular Injury to the Kidney
E. Nephrolithiasis
F. Tumors of the Urinary Tract
G. Prostate Problems

XIX. Immune System

A. AIDS
B. Disorders of Immune Mediated Injury

XX. Hematology

A. Clotting Disorders
B. Anemias

XXI. Cancer

A. Cancer Principles
B. Chemotherapy
C. Lymphomas
D. Breast Cancer and Ovarian Cancer
E. Testicular Cancer and Prostate Cancer